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CRUISE REPORT: J. W. POWELL 88-1

11-24-88

FUNDING: AMG (OEMG); OMR

AREA OF OPERATIONS: Gulf of Maine

DATES: June 30 - July 6, 1988; Woods Hole to Woods Hole

CHIEF SCIENTIST: Page Valentine, USGS

SHIP'S CAPTAIN: Joe Newhouse

SCIENTIFIC PARTY:	Page Valentine, USGS	John Risch, USGS
	Ken Parolski, "	Larry Poppe, "
	Rick Rendigs, "	Joe Uzmann, NMFS
	Dave Lubinski, "	Jim Broda, WHOI
	Bill Winters, "	Tom Davis, "
	Eric Strom, "	

PURPOSE: Determine the Quaternary stratigraphy, map, and assess the mineral content of fine-grained sediment deposits in Wilkinson-Murray Basin. Conduct seismic and bathymetric survey, collect piston cores and grab samples.

NAVIGATION: LORAN-C and GPS, all data collected on diskettes.

SCIENTIFIC EQUIPMENT: 3.5 kHz and Hunttec seismic reflection profilers; 30-ft piston cores; Van Veen grab sampler.

DAYS AT SEA: 7

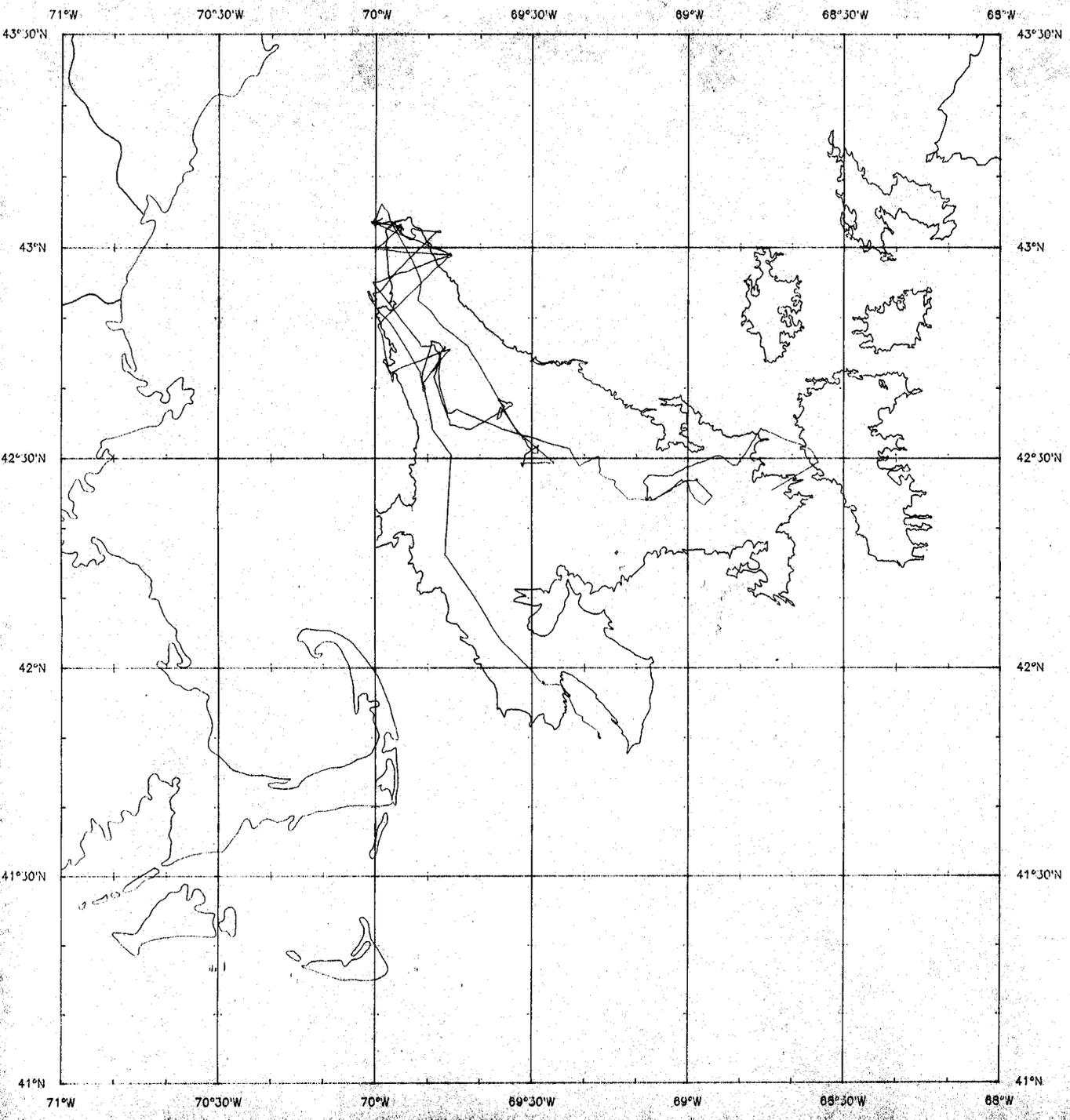
KM OF 3.5 DATA: 180

KM OF HUNTEC DATA: 526

STATIONS OCCUPIED: ^{17 gravity core} 17 piston core stations; 2 grab sample stations

STA. NO.	DATE	LAT N., deg min	LONG W. deg min	WATER DEPTH (m)	DEVICE
1PC	7-2-88	42 31.39	69 28.99	272	piston core (8.49m) gravity core (1.06m)
1G	"	42 37.00	69 36.24	286	van veen grab
2G	"	42 39.07	69 36.42	300	van veen grab
2PC	"	42 38.31	69 36.30	296	piston core (9.22m) gravity core
3PC	7-3-88	43 02.31	69 55.28	210	piston core (8.60m) gravity core (1.00m)
4PC	"	43 02.26	69 55.46	212	piston core (8.83m) gravity core (1.11m)
5PC	"	43 03.27	69 56.64	203	piston core (8.77m) gravity core (1.05m)
6PC	"	43 03.37	69 59.80	165	piston core (8.84m) gravity core (1.14m)

STA. NO.	DATE	LAT N., deg min	LONG W. deg min	WATER DEPTH (m)	DEVICE
7PC	"	43 03.58	70 00.49	145	piston core (8.70m) gravity core (0.94m)
8PC	7-4-88	42 41.02	69 51.18	266	piston core (9.14m) gravity core (0.96m)
9PC	"	42 46.30	69 49.36	240	piston core (9.07m) gravity core (1.00m)
10PC	"	42 45.59	69 46.82	252	piston core (9.10m) gravity core (1.07m)
11PC	"	42 43.00	69 47.64	237	piston core (8.73m) gravity core (1.07m)
12PC	7-5-88	42 26.87	68 58.23	227	piston core (9.04m) gravity core (0.90m)
13PC	"	42 26.69	69 01.03	225	piston core (8.91m) gravity core (0.88m)
14PC	"	42 25.88	69 02.34	214	piston core (1.51m) gravity core (0.0m)
15PC	"	42 24.10	69 07.10	226	piston core (4.83m) gravity core (0.87m)
16PC	"	42 24.08	69 07.87	226	piston core (4.91m) gravity core (0.74m)
17PC	"	42 26.78	69 08.43	230	piston core (9.08m) gravity core (0.87m)



Valentine

GULF OF MAINE CRUISE: POW 88-1

gomres.88

Preliminary results:

1. All cores (17) have been x-rayed, and they reveal interesting sedimentary textures and fabrics that are correlated to distinctive seismic stratigraphic units. At present, cores are being split, sampled, photographed, and analyzed for sediment texture, mineral content (by XRF), water content and bulk density, geotechnical properties, and paleo.
2. The TiO₂ content (fine-grained rutile) of Quaternary sediment in Wilkinson-Murray Basin increases with depth from approximately 0.7 wt pct at the seafloor to 0.9 wt pct at 9 m subbottom. These values are similar to those previously determined for a core from Stellwagen Basin.
3. Texture of Quaternary units is correlated to seismic units. Mud of variable thickness (2-9 m) is seismically transparent and overlies a distinctively-layered unit that contains ice-rafted sand and gravel in a mud matrix.
4. Seismic reflection profiles in the basin provide a basis for the preliminary assessment of the thickness, geographic distribution, and volume of TiO₂-bearing Quaternary strata.
5. Seismic stratigraphy, sediment texture, mineral content, and geotechnical properties provide a basis for determining the provenance and glacial/post-glacial environment of deposition of the Wilkinson-Murray Basin strata.

6 Rolls 3.5
 13 Rolls Hunter
 17 analog tapes (Hunter)
 8 3.5 disks May sp. 1702
 2 min. tapes (PS disks)
 17 PC (Broda)
 2 Grab samples (1 bottom)
 16 Gravity cores (Broda)
 magnified 8/p
 non 100
 removed
 100 sheets